great weight of fuel carried. Atmospheric disturbances were great at the mouth of the Clyde, near high hills. The weather was cloudy during the whole crossing, and only occasional glimpses of the sea were obtained to estimate the drift of the airship. Near Newfoundland the weather was very bad, and two electric storms were encountered, during which the wind varied rapidly from 10 to 50 miles an hour, and the airship was so tossed about that the crew gave her up for lost. It was after this trying period that Major Scott wirelessed for help, saying that his petrol was running short. Two destroyers were at once sent to render assistance, but Major Scott decided to attempt the completion of the journey under the airship's own power. His decision proved a wise one, and the great airship safely reached her mooring-ground in Long Island, but with only sufficient petrol remaining for a further ninety minutes' flight. The voyage was a very trying one for all concerned, and none of the crew had more than a few hours' sleep during the crossing.

The commander and crew are to be heartily congratulated on their great feat, and we can but admire the splendid pluck with which they carried on in the face of such great difficulties. It is obvious that in fair weather the R 34 would make the crossing with perfect ease, but it is also clear that we have a long way to go before the commercial use of trans-Atlantic airships is a reasonable proposition. The time taken when adverse winds are met is not very much less than that occupied by the fastest liners, while the useful weight which can be at present carried is extremely small. It is likely that larger airships will overcome the latter difficulty, since the gross lift of an airship varies as the cube of its length, while the power required for a given speed varies as the square. It follows that the larger ship has the greater percentage of its total lift available for useful merchandise. The great endurance of the airship is well brought out by the present flight, for it is almost certain that no existing aeroplane could have made the crossing under the same conditions. It is scarcely fair to attempt to form general conclusions as to the future of the airship from a pioneer flight made in circumstances of exceptional difficulty, and it would be wiser to wait until the feat has been repeated several times, when the possibilities of a commercial service and the directions in which improvement is to be sought should become apparent.

NOTES.

IN reply to a question in the House of Commons on July 8, Mr. Cecil Harmsworth stated that the appointment of Major C. E. Mendenhall, professor of physics in the University of Wisconsin, as Scientific Attaché to the United States Embassy has been notified to the Foreign Office by the United States Ambassador. No steps have as yet been taken by his Majesty's Government to appoint a Scientific Attaché to Washington. We believe the appointment of Prof. Mendenhall was a war measure, and that it has yet to be decided whether the post will be made permanent now that peace has been restored. It would be a progressive act on the part of our own Government to appoint Scientific Attachés to our chief Embassies.

MR. J. W. SIMPSON, corresponding member of the Institute of France, has been elected president of the Royal Institute of British Architects in succession to Mr. H. T. Hare.

THE Animals (Anæsthetics) Bill, which would make it an offence to perform certain operations on horses, dogs, cats, and bovines without the use of anæsthetics, was read a second time in the House of Lords on July 7, and was referred to a Select Committee.

MR. E. S. GOODRICH, Aldrichian demonstrator of comparative anatomy in the University of Oxford, has been elected membre-correspondant of the Société de Biologie of Paris, and also associé of the Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique.

Two John Foulerton studentships for original research of medicine, the improvement of the treatment of disease, and the relief of human suffering will shortly be awarded by the Royal Society. The studentships are each of the annual value of 400*l*. and tenable for three years, with the possible extension to not more than six years. They are open to men or women. Further particulars and forms of application may be obtained from the Assistant Secretary of the Royal Society, Burlington House, W.1.

THE John Fritz medal of the four national societies of civil, mining, mechanical, and electrical engineering has been awarded, says *Science*, to Major-Gen. George W. Goethals for his achievement in the building of the Panama Canal. The presentation was made on May 22 by Ambrose Swasey, past president of the American Society of Mechanical Engineers. Among those to whom the medal has been awarded in former years are:—Lord Kelvin, for his work in cable telegraphy; Alexander Graham Bell, for the invention of the telephone; George Westinghouse, for the invention of the air-brake; Thomas A. Edison, for the invention of the duplex and quadruplex telegraph and other devices; and Sir William H. White, for achievements in naval architecture.

HAVING held its meetings at Taunton during the period of the war, the Somersetshire Archæological and Natural History Society had hoped to hold its seventy-first annual meeting and excursions away from headquarters, but this has been found impossible owing to the difficulty of hotel accommodation. However, long excursions will be taken into Devon on this occasion, viz. to Hembury Fort, Cadhay House (1545–87), and Ottery St. Mary Church on July 30, and to Exeter on July 31. The annual meeting will be held at Taunton on July 29 under the presidency of Mr. Henry Balfour, curator of the Pitt Rivers Museum at Oxford, and past-president of the Royal Anthropological Institute. The subject of his presidential address will be "The Doctrines of General Pitt Rivers and their Influence." The outgoing president is Dr. F. J. Haverfield, who addressed the society last year on "The Character of the Roman Empire as Seen in West Somerset." The society now consists of between 900 and 1000 members, and owns a large library and the Somerset County Museum at Taunton Castle.

BY the death, at the age of seventy-two, of Sir William Macgregor, G.C.M.G., the Empire has lost a great Colonial Governor and science an ethnologist and geographer of note. The son of an Aberdeenshire farmer, he was educated for the medical profession, and, like Cecil Rhodes, in order to save his life accepted the appointment of Medical Officer at Seychelles, Mauritius, and Fiji. Sir William Macgregor's opportunity came in 1888, when he was posted to British New Guinea as Administrator. For eleven years he was occupied in reducing the pagan savage tribes to order, and while his annual reports gave a clear account of his novel experiences, ethnologists in Europe were not slow to recognise the value of the material he had collected. He quickly realised the importance of New Guinea as the place of contact between the Melanesian and Papuan cultures, and it was largely due to his stimulus that valuable work has been carried out in this region by English ethnologists—Haddon, Rivers, Seligmann, and Williamson. After Sir William Macgregor's period of service in New Guinea he held in succession the office of Lieutenant-Governor of Lagos, Newfoundland, and Queensland, retiring from the last position in 1914. He received the honorary degrees of LL.D. from the Universities of Edinburgh, Aberdeen, and Queensland, and of D.Sc. from Cambridge, and he was a fellow of several learned societies.

THE strong earthquake which occurred on June 29 in the Mugello Valley, near Florence, seems, from the few details which have reached us, to have originated at or near Vicchio, fifteen miles north-east of Florence. This village and eight others are said to have been destroyed. The shock was also severely felt at Florence, Bologna, Pistoia, Pisa, and Pontedera. The Mugello Valley is a well-marked seismic zone, though not very often in action. In 1542, 1597, and 1611 earthquakes causing considerable damage occurred in the neighbourhood of Scarperia, about seven miles north-west of Vicchio, and a fourth in 1762 near Sant' Agata, one mile farther to the north-west. In 1835 an earthquake just strong enough to fracture walls originated at or near Vicchio, and in 1843 and 1864 others of the same or slightly greater strength at Barberino and Firenzuola. There can be little doubt that the recent shock is the strongest of those which have occurred in the Mugello Valley during the last four hundred years With regard to the statement, however, referred to last week, that the earthquake is the strongest experienced in Italy since 1895, Dr. Charles Davison informs us that the authority quoted must have been referring to the Florentine district. "The last earthquake there of importance occurred in 1895. Since then there have been far greater earthquakes in Italy, such as the Messina earthquake of 1908 and the Avezzano earthquake of 1915."

IN the Publications of the University of California on American Archæology and Ethnology (vol. xiv., No. 3) Mr. Llewellyn L. Loud publishes a memoir on the ethnogeography and archæology of the Wiyot Territory, lying on the shores of Humboldt Bay and the lower courses of the Mad and Eel rivers. Excavations show that among this tribe earth-burial replaced cremation. Their relation to the more northern Indians is best illustrated by the implements known as "slave-killers," though it is still uncertain whether these were actually used to kill slaves. From the little that is known of the culture of the Oregon Indians, particularly those of the Columbia Valley, we are able to trace some cultural relationship between these two groups of tribes, and it may be expected that further investigations will reveal other resemblances of these people to the Wiyot.

MR. R. F. BARTON in his account of Ifugao law, in the University of California Publications on American Archæology and Ethnology (vol. xv., No. 1), gives a valuable account of savage law. The Ifugaos of the Philippine Islands are a tribe of barbarian head-hunters, but, at the same time, they have reached a high level of material culture. Their system of terrace cultivation is specially noteworthy. One example, of which a photograph is given, is 12 km. long without a break in its continuity, and some of the terrace-walls are 60 ft. high. There is, of course, no written law literature, but their traditional social rules are most elaborate. As Mr. Barton writes:—"This people, having no vestige of constitutional authority or government, and therefore living in literal anarchy, dwell in comparative peace and security of life and property. This is owing to the fact of their homogeneity, and to the fact that their law is based entirely on custom and taboo." He adds that, before the American Government was established, the loss of life from violence of all descriptions was not nearly so great as in civilised communities.

IN the April issue of the *Journal of Mental Science,* under the title of "Psychoses in the Expeditionary Forces," Capt. O. P. Napier Pearn describes the differences and similarities in the actual insanities (psychoses) found in military and civil practice respectively. Of such cases he has personally investigated 2000 at the Lord Derby War Hospital, Warrington, which up to April, 1919, had admitted 6000. All these had seen some form of service with an expeditionary force. He has collected and tabulated the facts relating to 200 cases which made a sufficiently good recovery to warrant their being returned to duty, as being those concerning whom it is easiest to obtain some form of after-history. Capt. Pearn's article is welcome as affording material with which to compare our much more extensive data of the military psychoneuroses, *i.e.* those functional mental and nervous disorders which do not constitute actual insanity. He points out how, while at the onset of a mental disorder in civil life the friends and relatives usually co-operate with the sick person in shielding him from medical advice, such a patient in the Army, owing to exigencies of discipline, is much more likely to receive attention from his medical officer at an early stage. The effect of this early care is that these cases respond to treatment in a very gratifying way. The author insists that the patient's mental re-adaptation must be aided by therapeutic conversations, giving him insight into his mental make-up in order that when he meets again with difficulties in the outside world he will be more able to surmount them. The article, while laying claim to no new discovery, lays additional emphasis upon the urgency of the early treatment of mental disorders.

IN a note recently received from Prof. J. Mascart a striking cloud phenomenon seen in north-east France on July 8, 1918, is described. At 7.25 p.m. (S.T.) a wide belt of thin cirro-cumulus cloud had formed over the sky, and in this belt was traced out in the course of a few seconds a looped curve consisting of a roughly circular loop with two arms extending from it. The shape somewhat resembled the figure 6, but with the end of the ring continued out to the left hand. The curve, of a width of about a semi-lunar diameter, was marked by a complete absence of cloud in the otherwise uniform cirro-cumulus sheet, clear blue sky being visible throughout its length. The circular ring, which was somewhat flattened, was of about 20° diameter, and at an elevation of about 60–70° above the western horizon. The phenomenon remained visible for twenty-five minutes until the cloud-sheet evaporated. During this period the cloud drifted slowly from south-west to north-east, and the looped curve appeared to maintain its position unchanged relative to the cloudlets. Prof. Mascart puts forward the interesting suggestion that the clear path through the cloud which formed the curve was caused by the passage of a small cyclone or whirl in the upper layers of the air, which by mixing caused the cloud-particles to evaporate. It thus left a track through the cloud similar to that which a tornado marks out for itself on the earth by its path of destruction. A drawback to this hypothesis is the great speed at which the curve was generated.

Monthly results of magnetical, meteorological, and seismological observations for several recent months, and the Annual Report for the year 1917, of the Royal Alfred Observatory, Mauritius, show the maintenance of considerable activity under the directorship of Mr. A. Walter. Information of the probable state of the weather over the surrounding area of the southern Indian Ocean to a distance of five hundred miles is supplied to shipping in the harbour daily between November and May, and during the cyclone season information, when necessary, is telegraphed to Madagascar, Réunion, and Rodrigues. From May to September cablegrams are sent weekly to the Director-General of Indian Observatories in connection with the monsoon predictions. Daily observations of rainfall are received from about 150 stations in different parts of the island. During 1917 the logs of seventy-six voyages trading in the neighbourhood were copied under the auspices of the Meteorological Society of Mauritius. This work, being carried on during the period of the war, may afford valuable information to the British Meteorological Office. The report states that "the glass ball of the old sunshine recorder having become discoloured, a new instrument was ordered"; its registers have since been used. This defect suggests extreme caution in using the sunshine values of recent years. The monthly results of observations give hourly values for most of the elements, and these show great precision. In September, 1918, there is no single day without the double occurrence of maximum and minimum atmospheric pressures, whilst other data, such as the velocity of the wind, exhibit equally regular periods.

A new uniaxial hydrous magnesium aluminium silicate, styled colerainite, is described by Messrs. Poitevin and Graham in a paper on "The Mineralogy of Black Lake Area, Quebec" (Canada Geol. Surv., Museum Bulletin No. 27, 1918). Analyses are given of the fine crystals of vesuvianite from the Montreal chrome pit and neighbouring localities. The variations in their habit seem connected with their colour, which ranges from colourless through yellow and emerald-green to lilac. The minerals of the district, including chromite and chrysotile, are constituents of the great belt of serpentine that extends discontinuously from Vermont across the province of Quebec. We wish it were not too late to protest against the American use of the verb "intrude" in an active sense without a succeeding preposition. We thus read in a few lines: "These igneous rocks are found intruding sediments"; "Devonian strata are not intruded"; and "the igneous rocks were probably intruded in pre-Devonian time." The second and third of these passages cannot both be correct, and the third seems the only one that should be accepted by geologists who write in English.

Statistics of the mineral production of India for the year 1917 have been published in the last volume to hand of the Records of the Geological Survey of India, vol. xlix., part ii. These show that the Indian mineral industry is so far in a satisfactory condition in that the value of the products has risen to 13,351,364*l*., an increase of about $12\frac{1}{2}$ per cent. on the value in 1916. In some cases this increase in value is due to a rise in the price of the commodity, which has been sufficient to compensate for an occasional falling off in the output. Nearly one-half of the total increase is due to coal, which contributes nearly one-third of the total value of the output, and in this instance it is satisfactory to note that the production has gone up by nearly a million tons to 18,212,918 tons. There was again a decrease in the output of gold by about 24,000 oz., the total yield being 574,293 oz., the decrease being almost wholly in the Kolar goldfield in Mysore. The production of manganese ore, too, has fallen from 645,204 tons in 1916 to 590,813 tons in 1917. Similarly there has been a falling off in the production of petroleum, namely, from 297,189,787 gallons to 282,759,523 gallons. On the other hand, it is interesting to note that the output of monazite in Travancore has increased from 1292·5 tons in 1916 to 1940·3 tons in 1917. The Bawdwin silver-lead mines in Burma have also increased their output, the lead produced having risen from 13,790 tons to 16,962 tons, and the silver from 759,012 oz. to 1,580,557 oz. There was a very trifling increase in the production of iron ore, and both the Tata Iron and Steel Co. and the Bengal Iron and Steel Co. were actively engaged throughout the year. Upon the whole, having regard to the difficulties under which the mineral industry laboured, the outlook for this industry in India appears to be very promising.

The publication in March, 1917, of the regulation for preventing the misuse of the title of "engineer" in Austria has aroused great interest in Germany, where for many years abortive efforts have been made to achieve the same results. In Austria the title is now reserved for those who have studied at a technical college and passed both State examinations or taken the doctorate. The affiliation of the technical colleges to the universities was regulated by the law of April 13, 1901, giving such schools the right to confer the degree of doctor. The Austrian Society of Engineers and Architects has agitated for this protection for twenty-seven years (*Ztsch. des Vereins deutscher Ingenieure*, October 23, 1918), but the war has brought matters to a satisfactory head. In Germany it is thought a way out could be found by conferring the title "Dipl. Ing." ("engineer holding a diploma") or Engineer by Examination. The writer in the journal quoted, however, does not hold this view, and considers that no person unless properly qualified should be permitted to use the title "engineer."

A report about to be issued by the U.S. Department of Commerce shows the great development of the electric light and power industry of the U.S.A. in the periods 1907–12 and 1912–17. The output of electric energy by the lighting and power stations increased at a considerably greater rate, and their expenses at a slightly greater rate, than their income. The total number of establishments in 1917 was 6541, 4224 being private and 2317 municipal undertakings. According to U.S. Commerce Report No. 84 (1919) (from which this note is taken), the total primary power in 1917 amounted to nearly 13,000,000 h.p.—an increase of 70·8 per cent. as compared with 1912. Of this power about two-thirds was derived from steam and about one-third from water, the slight surplus being obtained from internal-combustion engines. The total dynamo capacity in 1917 was, roughly, 9,000,000 kw., 74·3 per cent. more than in 1912; while the output of energy aggregated 25,500,000 kw.-hours, an increase of 119·9 per cent. for the period 1907–12. It is stated, incidentally, that incandescent electric lamps are rapidly exceeding arc lamps for street lighting.

IN a paper published in the June issue of the Journal of the Franklin Institute Gen. Squier describes experiments made on the use of trees as antennæ in radio-telegraphy and radio-telephony. He discovered in 1904 that certain trees, especially eucalyptus trees, could be usefully employed as antennæ. Owing to the dryness of the season and the nature of the soil at his camp in California, the regular Army "buzzer" telegraph and telephone sets were inoperative. When, however, they were connected to a nail driven into the trunk or roots of a tree they worked satisfactorily. During the war experiments were made on the efficiency of growing trees as antennæ. With modern sensitive amplifiers it was discovered that it was possible to receive signals from the principal European stations by simply laying a small wire netting on the ground beneath a tree and connecting it by an insulated wire to a nail driven in near the top of the tree. Instead of the wire netting, a few insulated wires buried a few inches in the ground were found to answer perfectly. Interesting tables are given showing the resistance and capacity of the conductor for various heights of the nail, and also by indirect methods—the open-circuit voltage—induced in the conductor.

THE Proceedings of the Physical Society for June 15 contains as an appendix, which has been issued separately, a report of the discussion on metrology in the industries which took place at the meeting of the society at the end of March. The discussion was opened by Sir Richard Glazebrook, and many manufacturers and others who had been concerned in the use of gauges in testing the accuracy of munition work turned out during the war took part in it. One of the most important facts brought out in the discussion was that many works which, by the use of gauges, were enabled to turn out work of a much higher order of accuracy than they had ever thought possible were now reverting to the old rule-of-thumb methods. Since quantity production and interchangeability are likely to prove essential features of the work of the future, it was suggested that this reversion should be so far as possible prevented by the issue of gauges in which the difference of size of the "go" and "not go" was considerably greater than in those used in first-class work. By this means the valuable principle of working to gauge could be retained even for the rougher work, and any future increase of accuracy which might be necessary would involve nothing more than a change of the gauges in use.

THE interesting new method of X-ray analysis initiated by Debye and Scherrer has been employed by A. J. Byl and N. H. Kolkmeyer to investigate the structure of ordinary white tin and the second variety of this metal known as grey tin, and an account of their work is published in the Proceedings of the Academy of Sciences of Amsterdam (vol. xxi., 1918). The method is eminently suitable for metals not available as single crystals, and for micro-crystalline substances in general. An X-ray tube with copper anticathode was used, the rays leaving the tube by an aluminium window. They passed thence through a narrow aperture in a thick leaden screen into a cylindrical camera. The tin lay in the axis of the cylinder in the form of a narrow bar, in one case of white hammered tin, and in the other of compressed grey tin. A photographic film, on which the interference lines were found after development to have been produced, was stretched against the wall of the camera. The interference lines resulting with grey tin showed at once that this variety of tin is also crystalline, and that the crystals belong to the cubic system. There appear to be eight atoms of tin to an elementary cube, which corresponds with the same structure as that of the diamond, and also with that of silicon. The tin in this form is obviously tetravalent. Ordinary white tin, according to Miller's measurements with electrolytic crystals, is tetragonal, and this fact is confirmed by the interference lines found in the experiments with the bar of this variety of tin. There appear to be three atoms to the elementary cell of the space-lattice, an atom lying at each corner of the tetragonal cell and one in the centre of each of the four prism faces of the cell, but none in the centres of the two basal-plane faces. This structure corresponds with atoms exhibiting prominently two valencies only. It would thus appear that grey tin possesses a structure corresponding with the exercise of the full tetradic valency of tin in the stannic salts, and ordinary white tin a structure corresponding with the exercise of its dyadic valency in the stannous salts.

THE first number of a new chemical journal, the *Chemical Age*, was issued on Saturday, June 21. The journal is to appear weekly, and to be devoted to industrial and engineering chemistry. It is now nearly five years since the *Chemical World*, a journal with corresponding intentions in regard to chemistry and chemical engineering, ceased to exist after the production of three volumes. Many people regretted its demise, for it was full of interesting matter and well got up, but the cause of its early failure was probably the fact that there was only a monthly issue, and something was wanted to keep pace with the current of events, rapid even before the war. This is more than ever true at the present time, when it may be said that the British manufacturer and the British public are at last waking up to the necessity of associating science with industry. The new journal has a larger page than the *Chemical World* or any of the other technical chemical journals, and is brought out at the moderate price of 21*s*. per annum, or 6*d*. a week. The first issue contains a number of interesting expressions of opinion from public men, including Mr. H. A. L. Fisher, Lord Sydenham, and well-known experts, including Sir Edward Thorpe, Col. Brotherton, Mr. James Swinburne, and others, in regard to the future of British chemical industry. On this subject there can be little difference of opinion, if only the same energy and skill already displayed continue to be employed and foreign competitors are excluded, at least for a time. The issues of the *Chemical Age* which have appeared so far contain matter of importance to every practical man connected with chemical industry, and we wish the new venture full success.

SOME analyses and tests of rigidly connected reinforced concrete frames are given in the University of Illinois Bulletin (vol. xvi., No. 8). The author, Mr. Mikishi Abe, derives formulæ for a number of such frames by the method of least work. Test frames were then designed according to the formulæ, and the experimental results were compared with those obtained by calculation. It was found that the elastic action of the frame and the manner of stress distribution agree fairly well with the analyses; that the locations of the points of inflection agree closely with the calculated positions; and that in carefully designed frames there need be no anxiety as to the rigidity of the joints, since effective continuity of members was found in the tests. There is a number of other deductions from the results which will be of service in design, and it would appear that the formulæ derived by analysis may be applied to a variety of forms of frames and are of wide applicability. Altogether, this bulletin constitutes a valuable contribution to our knowledge of reinforced concrete frames.

Messrs. Baillière, Tindall, and Cox are adding to their Industrial Chemistry Series "Animal Proteids," H. G. Bennett; "The Carbohydrates," Dr. S. Rideal; and "The Industrial Gases," Dr. H. C. Greenwood. The *Cambridge University Press* will shortly publish "An Enquiry concerning the Principles of Natural Knowledge," Prof. A. N. Whitehead, which will be divided into four parts, dealing respectively with the Traditions of Science, the Data of Science, the Method of Extensive Abstraction, and the Theory of Objects. *Messrs. G. G. Harrap and Co.* are publishing immediately "Physical Chemistry," Prof. A. T. Lincoln, and "An Introduction to Chemical German," E. V. Greenfield, with an introduction, notes, word-lists, and a vocabulary of German chemical terms. *Messrs. Longmans and Co.* have in the press "Elements of Vector Algebra," Dr. L. Silberstein. *Sir Isaac Pitman and Sons, Ltd.*, have just begun the publication of "Pitman's Technical Bookshelf." It is a record of their forthcoming and recent publications in science and technology, and contains also brief abstracts of articles from the technical Press. We learn from it that the following books may be expected shortly:—"Gas and Oil Operation," J. Okill; "Storage-Battery Practice," R. Rankin; "A Preparatory Course to Machine Drawing," P. W. Scott; a new edition, the fourth, of "Whittaker's Electrical Engineer's Pocket-Book," edited by R. E. Neale and completely re-written; and a new and enlarged edition of "Poole's Practical Telephone Book." *Messrs. J. Wheldon and Co.* have nearly ready "A Synoptical List of the Accipitres or Diurnal Birds of Prey," part i. (Sarcorhamphus to Accipiter), H. Kirke Swann. The edition is limited to 200 copies, only 100 of which will be offered for sale. *Messrs. Witherby and Co.* have in the press part i. of "A Geographical Bibliography of British Ornithology" (arranged under counties) from the earliest times to the end of 1918, W. H. Mullens, H. Kirke Swann, and the Rev. F. C. R. Jourdain. The work will be completed in six parts.

THE catalogues of Messrs. J. Wheldon and Co., 38 Great Queen Street, W.C.2, are always worthy of perusal. The latest one (new series, No. 87) is especially so, being a very complete and classified list of nearly three thousand books in zoological science arranged under the headings of Protozoa and Rotifera; Annelida; Hydrozoa, Polyzoa, Spongia; Echinodermata; Crustacea; Insecta; Mollusca; Marine Biology; Parasitology, etc.; Pisces (including Fisheries); Reptilia and Batrachia; Aves; Mammalia (faunas); Cetacea and Pinnipedia; Domestic Animals; Primates (and Man); General Zoology; Natural History; Biology, Anatomy, etc.; and Evolution, Heredity, Hybridity. Many very scarce works are included. The catalogue is certainly one to be consulted.

OUR ASTRONOMICAL COLUMN.

THE ECLIPSE AND WIRELESS TELEGRAPHY.—It will be remembered that a programme of observation was arranged to detect possible effects of the eclipse of May 29 on the transmission of Hertzian signals, and an interesting experience of this nature is reported by the French military radio-telegraphic authorities. There is at the observatory at Meudon a wireless reception apparatus, which on the day of the eclipse was arranged to receive the special signals sent from the Island of Ascension. It has been found that wireless messages from that place can be heard by night, though not by day, but during totality, when the shadow projected by the moon passed between Ascension and Meudon, the signals from Ascension were heard strongly. They then decreased in intensity, and ceased completely when the eclipse ended.

THE PARALLAX OF THE PLEIADES.—Prof. Kapteyn has proposed (Contributions Mount Wilson Observatory, No. 82) an indirect method of finding the mean parallax of the stars of a cluster by counting the number of stars of different magnitude it contains. The method requires a knowledge of the law of distribution of stars of different luminosity or absolute magnitude in the cluster, but if this is known, since apparent magnitude is a function of luminosity and parallax, it is possible to evaluate the latter from the data by formula. Dr. W. J. A. Schouten, of Aalten, Holland, is applying this principle to find the distance of star clusters, and gave thirteen of his results in the *Observatory* for March, the parallax of Præsepe being 0·024″, and the largest of the remainder 0·004″. He continues this in the June issue by giving details of his research on the Pleiades, and incidentally gives a valuable list of existing catalogues of the group. From the counts of stars of different magnitudes in five of these, in combination with a luminosity curve formed by Prof. Kapteyn, he deduces five values of the parallax which are in close accordance, and give a mean value 0·036″, with a probable error ±0·010″. Former determinations by Prof. Kapteyn and Prof. Plummer by other indirect methods gave 0·018″ and 0·024″ respectively. Dr. Schouten is encouraged to think that the comparative accordance of the results is some confirmation of his method.

PAINTING THE CORONA.—On the occasion of the total solar eclipse of June 8 last year (1918), which was observed with some success from stations in the United States, an unusual effort was made to obtain a picture of the phenomenon in its true colours. Mr. E. D. Adams, of New York, a benefactor to science, who joined the U.S. Naval Observatory eclipse party, took the responsibility for this, and, as colour photography was out of the question, enlisted the services of Mr. Howard Russell Butler, a portrait painter of repute, who has developed a short-hand method of noting both form and colour. Having prepared a drawing card with circles, radii, and angles marked, and having made himself mentally familiar with the kind of picture that might be seen, Mr. Butler utilised the 112 seconds of totality at his disposal by making a rapid sketch of the corona and prominences as he saw them, and wrote numbers on points and regions to indicate their colour according to his numerical colour-scale. The artist's first drawing was afterwards amended as to contours of luminosity by comparison with photographs, and then completed. The painting, which shows not only the prominences and corona, but also the sky around, was exhibited at the American Museum of Natural History, and a copy forms the frontispiece to *Natural History*, the journal of the museum, for March last.

THE BRITISH SCIENTIFIC PRODUCTS EXHIBITION.

THE second British Scientific Products Exhibition promoted by the British Science Guild was opened at the Central Hall, Westminster, on Thursday, July 3, and it will remain accessible to the public until August 5. It will be remembered that the first exhibition was held in King's College last August, but owing to the arrangements of the college, due to demobilisation, it was found impossible to hold the present exhibition there. Last year's exhibition was